

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on December 17, 2001, and the references cited therewith.

Claims 2-6, 10-15, 29, 30, 32, 34, 37, and 50-52 are amended, and claims 53 and 54 are added; as a result, claims 2-6, 10-18, 29-38 and 50-54 are now pending in this application.

Information Disclosure Statement

Applicant respectfully requests that a copy of the 1449 Form, listing all references that were submitted with the Supplemental Information Disclosure Statement filed on March 21, 2000, marked as being considered and initialed by the Examiner, be returned with the next official communication.

§112 Rejection of the Claims

Claims 2-4 and 50-52 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 2 has been amended to indicate that the dielectric is formed by oxidizing the metal layer. Claims 3 and 4 depend from claim 2 and so include this limitation.

Claim 50 has been amended so that it now depends from claim 37, which includes the limitation of oxidizing the metal layer to form a metal oxide to serve as the dielectric layer. Claims 51 and 52 depend from claim 50 and so include this limitation.

In view of the amendments to claims 2 and 50, Applicant respectfully requests that the rejection of claims 2-4 and 50-52 under 35 U.S.C. § 112, first paragraph, be withdrawn.

§102 Rejection of the Claims

Claims 2-6, 10, and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,450,048 to Gaulier ("Gaulier"). Gaulier discloses forming an aluminum metal layer (5a) to serve as capacitor electrode, and then oxidizing the aluminum layer to form an

alumina layer (9) to serve as the dielectric layer for the capacitor. Thus, the oxide formed in Gaulier is limited to alumina because the capacitor electrode is made of aluminum.

Applicant's invention is a method of forming a capacitor that includes forming an electrically isolated conductive layer and then forming a metal layer formed over the conductive layer. The oxide is formed by oxidizing at least a portion of the *metal layer*, as opposed to oxidizing the *conductive layer*. Thus, the oxide formed in Applicant's claimed invention is not limited to an oxide of the conductive layer, and is not limited to alumina as taught in Gaulier. This is important because it is often desirable to have the dielectric layer of a capacitor be an oxide of a metal different than the metal making up the capacitor electrodes.

Independent claims 2 and 10 have been amended to clarify this point. Accordingly, Applicant respectfully requests that the rejection of claims 2-6, 10 and 11 under 35 U.S.C. § 102(b) be withdrawn.

§103 Rejection of the Claims

Claims 12-16, 29-33, 37, and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaulier as applied to claims 2-6, 10, and 11 per above. Further, claims 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaulier as applied to claims 12-16, 29-33, 37, and 38 above, and further in view of U.S. Patent No. 4,936,957 to Dickey et al. ("Dickey"). Thus, the basis for the obviousness rejections of the above-cited claims is Gaulier as applied to claims 2-6, 10 and 11 under 35 U.S.C. § 102(b), discussed above.

Claim 11 has been amended to overcome the anticipation rejection under 35 U.S.C. § 102(b) in view of Gaulier, as described above. As claims 12-18 depend from claim 11, the basis for the rejecting claims 12-18 in view of Gaulier is removed for the reasons discussed above.

Also, independent claims 29 and 32 have been amended in a manner similar to independent claims 2 and 10. Specifically, claims 29 and 32 have been amended to include the limitations that the conductor layer is formed of a first material, and the overlying metal layer is formed of a second material. As discussed above, this process is different than the process of Gaulier because Gaulier oxidizes the aluminum conductor layer directly to obtain an oxide of alumina to serve as the dielectric layer. Thus, the basis for rejecting claims 29-33 in view of

Gaulier is removed.

Claim 38 has been amended to depend from independent claim 37. Independent claim 37 already includes limitations covering the oxidization of a metal layer covering a polysilicon conductive layer. As discussed above, this is different than the process of Gaulier because in Applicant's claimed invention the underlying polysilicon electrode remains unoxidized. This in turn allows for a dielectric layer other than an oxide of the underlying capacitor electrode. Thus, Applicant respectfully submits that the basis for rejecting claim 37 in view of Gaulier is misplaced and that claim 37 is allowable. Claim 38 is allowable because it depends from claim 37.

In view of the above, Applicant respectfully requests withdrawal of the rejection of claims 12-16, 29-33, 37, and 38.

Allowable Subject Matter

Claims 34-36 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 34 depends from claim 32, which has been amended to include the limitations that the conductive layer be formed of a first material and the conformal metal layer be formed of a second material. Because this process is different than the process disclosed in Gaulier for the reasons discussed above, Applicant submits that claim 32 is allowable. Accordingly, Applicant respectfully requests that dependent claims 34-36 are allowed.

New Claims

New independent claim 53 and dependent claim 54 depending from claim 53 have been added. Support for these claims can be found in the specification on page 4, line 19 through page 7, line 4, and FIGS. 1-7. The materials listed in claim 54 are listed in the specification on page 5, lines 8 and 9.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number 09 246,918

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Title DEVICE'S HAVING IMPROVED CAPACITANCE AND METHODS OF THEIR FABRICATION

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Joe Gortych, at (802) 660-7199 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date Mar. 18, 2002

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CERTIFICATE UNDER 37 CFR 1.8. The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 18 day of March, 2002.

Name

Tina Pugh

Signature

Ziff